

Color Splitting Apparatus and Method with Unequal Glass Path Lengths

ABSTRACT OF THE DISCLOSURE

A three element prism system and method for splitting/combining three different colors of light arranged such that the size of a selected one of the color prism, such as for example, the red prism and, consequently the clear aperture, are increased without a corresponding increase in the size of the other prisms (e.g., the blue and green prisms). This is accomplished by adjusting the air gap A_2 of the selected light path (e.g., red) so that the effective total selected light path T , which includes the selected light air gap A_2 and the selected light glass path G_2 is the same as the total path length T of both the other light paths (e.g., green and blue) comprised of air gap A_1 plus glass path G_1 .